Gateway

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The ARRL Packet-Radio Newsletter

PHASE 3C LAUNCH TEAM ARRIVES IN KOUROU

Teams from AMSAT NA and AMSAT DL arrived in Kourou, French Guiana on March 29 to begin final preparations for the launch of the Phase 3C amateur satellite, which is now expected to occur in less than two months.

The AMSAT NA team under Jan King, W3GEY, and the DL team under Karl Meinzer, DJ4ZC, began work upon arrival at the European Space Agency facility in Kourou which is located on the northeast coast of South America. Initial tasks the team is to perform include uncrating the spacecraft and support equipment. They will then apply thermal coatings and other materials needed for the flight. The first team's tasks will require about two weeks to accomplish.

A second team will deploy for Kourou in mid-April for the critical spacecraft fueling operation. The AZ50 and nitrogen tetroxide fluids are hazardous and must be handled very carefully.

Beginning in early May, a third team will deploy to Kourou for final preparations and spacecraft monitoring. The launch is currently slated for early June. The exact launch date depends on the results of the V-22 launch scheduled for May 11.

from AMSAT NA News Service

PACKET RADIO SEMINAR AT TRENTON COMPUTER FESTIVAL

An all-day packet radio seminar will be conducted at the Trenton (New Jersey) Computer festival on Saturday, April 23. Starting at 10 AM and running to 5 PM or later, the following topics and speakers are confirmed:

- "What's New in Packet Radio"
  by Brian Lloyd, WB6RQN
- "Using the PRMBS BBS System"
  by Brian Riley, KA2BQE
- "Operating Procedures for Packet Radio"
  by Norm Sternberg, W2JUP
- "Digital Signal Processing"
  by Bob McGwier, N4HY
- "TCP/IP Network Communications"
  by Phil Karn, KA9Q
- "Digital Satellite Communication"
  (speaker not yet determined)

There will also be an "Introduction to Packet Radio" by Jon Pearce, WB2MNF, which will occur simultaneously with one of the above sessions.

The Computer Festival is at Trenton State College and the packet radio seminar will be in the Nursing Building, which is on the main square behind the student center. For those not familiar with the Computer Festival, you should plan to arrive early (7 AM is not too early, although you'll spend a lot of time waiting around) if you want a reasonable place to park. Do not plan to arrive at 9:45 AM for the 10 AM session because you will face at least 20 minutes in traffic around the College plus another 20 minutes walking in from the remote parking areas.

from Jon Pearce, WB2MNF

PACKET RADIO AT THE DAYTON HAMVENTION

The 1988 Dayton HamVention (April 29-May 1) will be the site of many packet radio activities. On Friday, a packet radio forum will be moderated by Bob Neben, K9BL, in room 3 of the Hara Arena. The schedule for the forum is as follows:

- 1 PM: "Packet Radio Introduction"
  by Dave Peterson, N7BHC
- 2 PM: "Level 1 Discussion - Modems"
  by Lyle Johnson, WA7GXD
- 3 PM: "PACSAT and DSP"
  by Bob McGuire, N4HY
  and Tom Clark, W3IWI
- 4 PM: "Networking - How to get started"
  by Dave Toth, VE3GYQ
  and Chris Sullivan, VE3NRT

The Ohio Packet Council (OPAC) and Tucson Amateur Packet Radio (TAPR) will be manning a booth in the non-commercial area of the HamVention and TAPR will also be present at the AMSAT booth where they will be selling and taking orders for TAPR wares.

For those interested in packet radio operating while at the HamVention, the Official OPAC HamVention '88 Packet Bulletin Board, W8MDK-8, will be on-site operating at 145.07 MHz with forwarding to and from the N8NN PBBS. Also, the N8NN-PBBS will be on 145.01, 145.07 and 221.11 MHz. (The PBBS is located approximately 10 miles north of, and within line-of-sight, of the HamVention). The N8NN-8 NET/ROM will be on 145.01 MHz. (It is located approximately 4 miles south of the HamVention). Other Dayton area PBBSs and digipeaters are the N8ACV PBBS on 145.07 MHz, the

WB8ICL PBBS on 145.05 and 145.07 MHz, and the W8JUK digipeater on 145.07 MHz.

Saturday evening at 6 PM, a packet radio dinner at McNasty's on Rip Rap Road will give all of the packeteers in attendance a chance to meet each other and have a good meal. Announcements and directions concerning the dinner will be posted at the HamVention.

from Hank Greeb, N8XX

PC PACKET ADAPTER TO BE INTRODUCED AT DAYTON

DRSI (Digital Radio Systems, Inc.) will introduce its PC*Packet Adapter (PCPA) for the IBM PC/XT/AT and clones. The PCPA card provides two TNCs on one short plug-in card. It includes an on-board modem for 1200 baud VHF operation and a second port that connects to a 300-baud HF modem, which is also available from DRSI. The DRSI HF*Modem has an integral tuning indicator to make HF packet simple and easy and it uses the EIA RS-232-C standard interface to connect with the PCPA, which separates the HF radio and the computer to reduce mutual interference.

DRSI's AX.25 packet radio software runs on the PC's CPU, totally replacing the external TNC. The software features simultaneous, dual-port, multi-connect packet radio operation. A station equipped with the PCPA and HF*Modem can monitor and QSO with stations on VHF and HF simultaneously.

The PCPA will be available at a special introductory price of $99 at Dayton. After the HamVention and until July 1, the PCPA will be $119.95. After July 1, the PCPA will be $139.95. DRSI's HF*Modem is available for $59.95.

Any questions or orders should be sent to Digital Radio Systems, Inc, 2065 Range Road, Clearwater, FL 34625 or telephone 813-461-0204 from 9 AM to 5 PM Eastern time.

The Nitty Gritty

The PCPA is a half-length plug-in accessory card for the IBM PC and clones. It provides two logically independent packet radio channels. The adapter consists of an 8530 Serial Communications Controller (SCC), a 1200-baud modem, an EIA RS-232-C port for external modems, as well as the necessary timing and interface circuitry for the PC bus.

The 8530 provides major support for the packet radio environment in a single chip. This chip's potential was recognized as early as 1985 when Howie Goldstein, N2WX, designed an 8530 daughter-board for the Xerox 820 computer (the 820 was the early development hardware for the TAPR TNC 2, as well as the WØRLI PBBS). The 8530 replaces at least five separate chips in the TNC 2 design.

The PCPA's interfaces to the outside world are through a single-chip 1200-baud modem and an EIA RS-232-C/TTL-selectable port. The single-chip modem provides a no-tune source of the Bell 202 tones used on VHF. It has level adjustments for both input and output and its hardware interface to the radio is through a DB-9 connector. Its PTT line has the requisite timeout timer. The RS-232-C/TTL port is currently used in the RS-232-C configuration as a connection to a stand-alone 300-baud modem for HF packet radio operation. (DRSI's HF*Modem has an LED tuning indicator, a phase-locked-loop modem and front-panel sensitivity control.) In the TTL configuration, the RS-232-C/TTL port can also be used to connect to the high-speed RF modems that are now emerging.

Operationally, the PCPA provides its user with two independent packet radio channels, the functional equivalent of two traditional stand-alone TNCs. When used with a HF modem, a single card provides simultaneous capability to operate AX.25 packet radio on both HF and VHF frequencies. DRSI can also produce versions which support either two HF modems or two Bell 202 modems for special applications.

The software environment will initially mimic a stand-alone TNC. This is not a desirable long-term interface, given the well known deficiencies, however, this does permit users to operate using a familiar command set. The first distributed software supports interactive 'chat' QSOs as well as the PBBS software.

DRSI is working on a true driver which supports an MS-DOS standard programmatic interface. This driver will be much more efficient and flexible and will require only minor reprogramming of existing applications to take advantage.

from Andy Demartini, KC2FF, DRSI President

POCKET PACKET RADIO

The new Heath HK-21 TNC is a miniature TNC 2-compatible that is small enough to fit in your pocket and it has a small appetite (9 to 13.8 V dc @ 40 mA nominal) that makes it very desirable for portable packet-radio applications. Besides the normal AX.25 functions, the HK-21 also includes a built-in miniature bulletin board to serve as a personal packet radio mailbox. The HK-21 is available assembled for $219.95 from Heath Company, PO Box 1288, Benton Harbor, MI 49022. An optional rechargeable battery pack that fits inside the unit is also available for $17.95.

AMSAT TO TEAM WITH AEROSPACE TECH CENTER

AMSAT has agreed in principle to join with Weber State College in Ogden, Utah in the design and construction of a broad range of satellite and space-related projects. Weber officials met with their AMSAT counterparts at AMSAT's new Boulder, Colorado facility to be briefed on possible areas of joint effort. The March 25 and 26 meeting followed preliminary meetings at Weber State earlier in the month.

The Center for AeroSpace Technology (CAST) at Weber State is headed by Robert J. Twigg. Weber State has previously built and launched a small satellite under Mr. Twigg. The shuttle launched Getaway Special (GAS can) was called NUSAT for Northern Utah Satellite. NUSAT-1 was a radar calibration satellite operated by students at Weber State and launched in 1985. To date, NUSAT-1 has been the only payload to be ejected from a GAS can to obtain an orbit apart from the shuttle's. NUSAT-II is now under construction.

The cooperative effort between AMSAT and CAST will likely bridge many areas of technology and span several classes of spacecraft although specific agreements remain to be specified. CAST has resources including CAD/CAM, mechanical testing, fabrication, simulation and more. AMSAT programs now under way include small packet radio satellites, Phase 3 class satellites and Phase 4 geosynchronous satellites. In addition, intense effort is now under way in the Digital Signal Processing area for both space and earth segment applications.

The relationship between AMSAT and CAST could be a favorable one for both groups. With a unique position in small satellites, AMSAT can help develop expertise at CAST. Meanwhile, CAST has a notable student and faculty resource to commit to projects of mutual interest as well as a fine plant facility and equipment to implement these projects.

from AMSAT NA News Service

AMIGA PBBS SOFTWARE AVAILABLE

"CONNplex" is a multiple-connect PBBS program for the Commodore Amiga computer which was written by Mike Staines, WA1PTC. The PBBS software is available on the Amiga Amateur Radio Public Domain Disk #3 which is distributed by Kathy Wehr, WB3KRN, RD#1, Box 193, Watsontown, PA 17777. To obtain a copy of the disk, send Kathy a blank formatted disk, a sturdy return envelope, a label printed with your name and address and sufficient postage to mail the disk back to you. (Kathy is editor of Amigan Beacon, a newsletter for hams with Amiga computers, which is associated with the on-the-air AmigaNET which meets Sundays, at 2200Z on 14.345 MHz and Tuesdays at 2300Z on 3.882 MHz. Amigan Beacon is available via packet radio from the KB3UD PBBS.)

from Amiga Beacon

AMTOR SOFTWARE AVAILABLE

This is a reminder that AMTOR Z80 assembler source code is available from Paul Newland, AD7I. The code is available for personal hobby use to those who send Paul a formatted 360-kbyte MS-DOS diskette with a prepaid mailer. For more information, contact Paul at PO Box 205, Holmdel, NJ 07733-0205.

from Paul Newland, AD7I

FORUM FOR FRIENDS OF OKLAHOMA NET/ROM

The NODE (NET/ROM Open Discussion Editorial) is a monthly newsletter edited and published by Larry Connor, WA7UIB, and Doug Everitt, N5DUB, to provide a forum for friends of NET/ROM in Oklahoma (and thereabouts). Mail, messages and articles for The NODE may be sent to N5DUB @ WD4LPU or WA7UIB @ WB5RZX. Comments and contributions (to defray printing costs) may be sent to N5DUB at Box 76451, Oklahoma City, OK 73147 or to WA7UIB at 2917 Canyon Oaks Ct, Norman, OK 73071.

PACKET RADIO IN THE REAL WORLD

When inhabitants of the real world ask, "What has Amateur Radio done for me lately?" you can refer them to two recently published articles describing amateur packet radio's impact outside of the Amateur Radio shack.

Packet Radio Underwater Lifeline

"An underwater visit to Aquarius" written by Glenn Zorpette in IEEE Spectrum describes a high-tech underwater habitat that features an autonomous life support system with advanced sensing and data-handling capabilities that permit scientists, 50-feet below the surface of the Caribbean, to concentrate on their underwater studies while their life support system is monitored automatically. The key to the life support monitoring system was designed by Dave Brecher, an Amateur Radio operator, who used off-the-shelf amateur packet radio TNCs to transfer life support data to the shore via VHF radio. Life support data is sampled by sensors in the Aquarius, collected by the Aquarius' computer and transferred by modem to a TNC aboard the Aquarius life support buoy that packetizes the data for transmission to the shore support base. For a full description of the operation, refer to the March 1988 issue of IEEE Spectrum.

from Phil Karn, KA9Q

Packet Radio Provides
Remote Connection To Mainframes

For his PhD, Paul Flaherty, N9FZX, is experimenting with amateur packet radio techniques via the microwave frequencies to extend Stanford University's Ethernet and AppleTalk networks beyond the campus to researchers working at home who need access to the university computers quickly. Using 2-foot diameter dish antennas, Paul estimates that 10-mile links may be established. N9FZX's efforts are described in the April issue of Macworld.

THE FCC PART 97 REWRITE AND PACKET RADIO

On March 24, the FCC acted to establish PR Docket 88-139, a proceeding which looks toward modernization of the rules governing Amateur Radio. A Notice of Proposed Rulemaking will be issued shortly, but is not yet available; it is said to be an 87-page document and comments will not be due until August 31 in order to permit careful review and study.

This is the so-called "Part 97 Rewrite." According to the Commission's news release on its action, a reorganization of the amateur rules has not been done since 1951 and the result of ensuing technological advances and operational changes is a patchwork quilt of rules that is confusing, particularly to the prospective licensee.

from The ARRL Letter

GATEWAY CONTRIBUTIONS

Submissions for publication in Gateway are welcome. You may submit material via the US mail to:

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or electronically, via CompuServe to user ID 70645,247. Via telephone, your editor can be reached at 203-879-1348 on evenings and weekends, and he can switch a modem on line to receive text at 300, 1200, or 2400 bauds.

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